Meeting: 999, Nashville, Tennessee, SS 13A, Special Session on Semigroup Theory

999-20-229   **Steven Seif*** (`swseif01@louisville.edu`), Steve Seif, Mathematics Dep't, U of Louisville., Louisville, KY 40292. *Asymptotic growth of free spectra of finite semigroups.*

In the 1960's, G. Higman showed that the free spectrum of a finite group is sub-log-exponential if and only if the group is nilpotent. In particular, for a finite non-nilpotent group G there exists a positive real c and a positive integer n such that for all $m \geq n$, $f_m \geq 2^{2^{cm}}$, where f_m is the cardinality of the m-generated relatively free algebra in the variety generated by G. So "most' finite groups have free spectrum which is log-exponential.

It turns out most finite monoids have also have free-spectrum which is log-exponential. We provide a stringent necessary condition for a finite monoid to be sub-log-exponential. (Received August 23, 2004)